

### ABSTRACT OF DISCLOSURE

A pen-shaped input system designed to recover handwriting trajectory in space by using a magnetic field sensor. The system detects a tilt angle relative to the geomagnetic field from a magnetic field detection unit and an acceleration detection unit, and respective three-dimensional axial direction accelerations based on movements of the pen, and calculates the absolute coordinates of the pen. Further, the system converts the acceleration measurement values of the pen into a pen tip acceleration value, and applies the acceleration value for recovering handwriting trajectory of the pen. Such a pen-shaped input system uses the magnetic sensor so that it can prevent accumulative errors occurring due to integrations of the detected information when using inertia sensors, and the system can improve a processing speed since its signal processing is simplified.